

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of Claims:**

1. (currently amended) A gas discharge laser, comprising:
  - a housing;
  - a first electrode;
  - a second electrode;
  - a second electrode support;
  - a first cross-flow blower section including a plurality of blades, further including a plurality of internal hubs and two end hubs, each of said end hubs coupling with a shaft and defining a cylindrical form extending along a cylindrical axis of the blower section;
  - a second cross-flow blower section including a plurality of blades, further including a plurality of internal hubs and two end hubs, each of said end hubs coupling with a shaft and defining a cylindrical form coaxial with the cylindrical form of the first cross-flow blower section, wherein the blower sections are disposed longitudinally along the cylindrical axis so that two end hubs of the blower sections are adjacent to each other; and
  - a flange supporting the adjacent hubs of the first and second blower sections, wherein the flange is attached to the housing in an area opposite the electrodes ~~and does not extend in the direction of gas flow beyond an outlet area of the blower sections to permit the gas flow through the two blower sections to combine;~~
  - said flange also having a leading edge and a trailing edge with respect to a direction of gas flow, wherein part of the trailing edge of the flange is located inside a cylindrical volume defined by the combined cylindrical forms of the blower sections to permit gas flowing through the two blower sections to combine.
2. (previously presented) A gas discharge laser as in Claim 1, said flange not contacting said second electrode support.

3. (previously presented) The gas discharge laser of any of claims 1 or 2, wherein a cross-section of the flange has an aerodynamic shape with respect to a direction of gas flow.

4. (previously presented) The gas discharge laser of any of claims 1 or 2, wherein each of the blades comprises a top surface having a first radius of curvature and a bottom surface having a second radius of curvature, wherein the first radius of curvature is smaller than the second radius of curvature.

5. (previously presented) The gas discharge laser of claims 1 or 2, wherein each blade has a cross-section shaped like an airfoil.

6. (previously presented) The gas discharge laser of claim 5, wherein inner and outer surfaces of said blades have different radii of curvature.

Claim 7. (cancelled).

8. (previously presented) The gas discharge laser of any of claims 1 or 2, wherein a cross-section of the flange has an aerodynamic shape with respect to a direction of the gas flow, wherein each blade has a cross-section shaped like an airfoil, wherein the second end of the flange is coupled to the housing on a side opposite the first electrode.

9. (previously presented) The gas discharge laser of any of claims 1 or 2, wherein the blades, internal hubs and end hubs are composed of one of the group consisting of aluminum alloy, magnesium alloy, titanium alloy and steel.

10. (previously presented) The gas discharge laser of any of claims 1 of 2, wherein the blades, internal hubs and end hubs are composed of aluminum alloy.

11. (previously presented) The gas discharge laser of any of claims 1 or 2, wherein the radial blades, internal hubs and end hubs are composed of magnesium alloy.

12. (previously presented) The gas discharge laser of any of claims 1 or 2, wherein the blades, internal hubs and end hubs are composed of titanium alloy.

13. (previously presented) The gas discharge of any of claims 1 or 2, wherein the blades, internal hubs and end hubs are composed of steel.

Claims 14-26. (cancelled).

27. (previously presented) A gas discharge laser, comprising:  
a housing;  
an upper electrode;  
a lower electrode;  
a lower electrode support; and  
a cross-flow blower, comprising a first shaft and a second shaft, wherein each of the shafts comprise an end portion, wherein each end portion includes a center cross-sectional area, a first end cross-sectional area and a second end cross-sectional area, wherein the center cross-sectional area has a diameter greater than the diameter of the first end cross-sectional area, and wherein the center cross-sectional area has a diameter greater than the second end cross-sectional area, wherein each of the end portions further comprise a minimum diameter  $D_{\min}$  and wherein  $D_{\max} - D_{\min}$  is approximately .02 millimeters.

28. (previously presented) A gas discharge laser, comprising:  
a housing;  
an upper electrode;  
a lower electrode;  
a lower electrode support; and  
a cross-flow blower, comprising a first shaft and a second shaft, wherein each of the shafts comprise an end portion, wherein each end portion includes a center cross-sectional area, a first end cross-sectional area and a second end cross-sectional area, wherein the center cross-sectional area has a diameter greater than the diameter of the

first end cross-sectional area, and wherein the center cross-sectional area has a diameter greater than the second end cross-sectional area, wherein each of the end portions further comprise a minimum diameter  $D_{\min}$  and wherein  $D_{\max} - D_{\min}$  is in the range of .005 to .05 millimeters.

Claims 29-33. (cancelled).

34. (previously presented) A gas discharge laser, comprising:
- a laser tube filled with a gas mixture;
  - a plurality of electrodes within the discharge chamber for energizing the gas mixture, said plurality of electrodes including a pair of main discharge electrodes spaced apart by a discharge volume;
  - an optical resonator for generating a laser beam;
  - a cross-flow blower assembly including a pair of longitudinally adjacent and coaxially disposed cylindrical cross-flow blowers;
  - a flange supportingly disposed between said pair of cross-flow blowers and coupled to the cross-flow blowers; and
  - an electrode support bar for supporting one of the pair of main discharge electrodes, wherein the electrode support bar extends longitudinally along substantially the entire length of the electrode that it supports, wherein said flange is not coupled directly to said electrode support bar.

Claims 35-40. (cancelled).

41. (previously presented) A gas discharge laser, comprising:
- a laser tube defined by a support housing filled with a gas mixture;
  - a plurality of electrodes defining a discharge volume within the laser tube, the electrodes for energizing the gas mixture, said plurality of electrodes including first and second main discharge electrodes spaced apart by the discharge volume;
  - a optical resonator for generating a laser beam; and

a cross-flow blower assembly for circulating the gas mixture through said discharge volume, said cross-flow blower assembly including a shaft, said shaft including a coupling segment with a longitudinally non-uniform thickness, such that when said blower vibrates in bending mode, said coupling segment rocks smoothly within a mating coupling of the support housing

wherein a difference in maximum and minimum thickness of said coupling segment is less than 1.0 mm

42. (original) The laser of Claim 41, wherein said difference is more than 0.005 mm.

43. (previously presented) The laser of Claim 41, wherein a difference in maximum and minimum thickness of said coupling segment is between 0.005 mm and 0.05 mm.

**Amendments to the Drawings:**

The attached two sheets of informal drawings includes changes to Figs. 7 and 8. These sheets replace the two original sheets of informal drawings for Figs. 7 and 8. The changes are marked in red ink.

Attachment: 2 Replacement Sheets